FortiAuthenticator™ REST API

Solution Guide

FortiAuthenticator™ REST API Solution Guide

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Change Log

Revision	Date	Change Description
1	2012-07-12	Initial Release
2	2012-11-01	Updated API to reflect changes since 2.0 release
3	2013-10-21	Updated API to reflect changes since 3.0 release
4	2013-11-18	Added missing group config in /localusers/
5	2014-06-09	Updated API to reflect changes since 3.1 release

Introduction

This document introduces the FortiAuthenticator REST API and details how it can be configured and utilized.

Software versions

The API described within this document is as supported by FortiAuthenticator 3.1 and upwards.

The FortiAuthenticator API

Introduction to REST

An API (Application Programming Interface) is a set of defined interfaces to accomplish a task, such as retrieving or modifying data. FortiAuthenticator provides a Representational State Transfer (REST) API for interaction with components of the system. Programs communicate with the REST API over HTTP, the same protocol that your web browser uses to interact with web pages.

The REST API is based on interactions with a web page; data is treated like a static web page:

- Add data by POSTing a web page
- Fetch data by GETing a web page
- Update data by PUTing a web page
- Partial updates supported by PATCHing a web page
- Delete data by DELETEing a web page

After receiving the request, the FortiAuthenticator API sends back an HTTP response code. These error codes are summarized in Appendix A – API Response Codes.

Initializing the REST API

Unlike most other vendors, the FortiAuthenticator API is accessible without additional cost or licensing. The server however is disabled by default and needs to be configured.

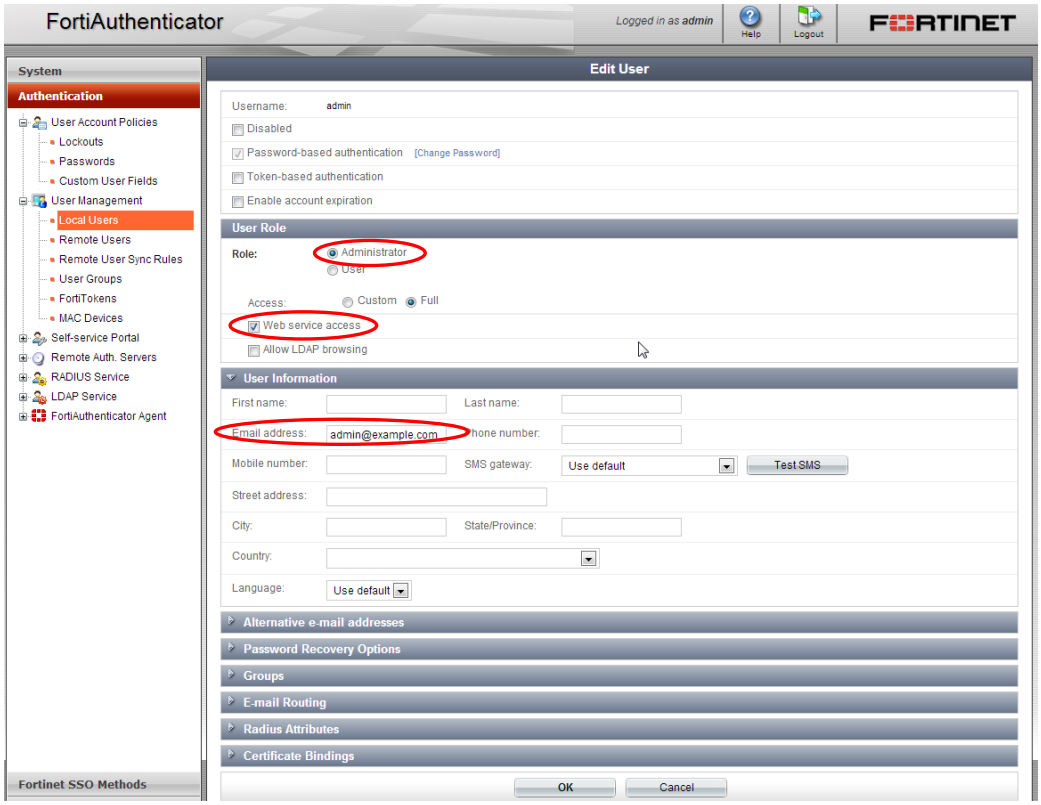
To enable the API, enable a user with administrator rights and select Web Service Access.

You must configure an e-mail address for the user at this point to as the API challenge key will be emailed to the address specified.

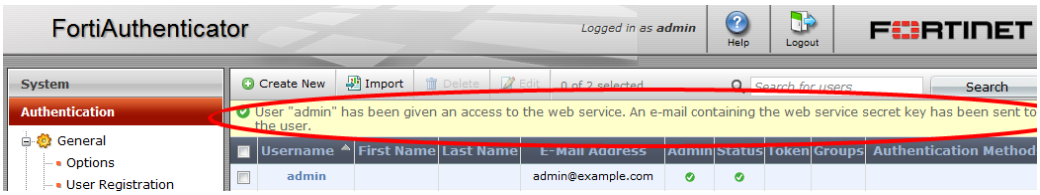
Note: The option *Allow RADIUS authentication* is removed when elevating a user to an FortiAuthenticator administrator.

Create a new user or edit an existing one. In the example shown, the admin account is used.

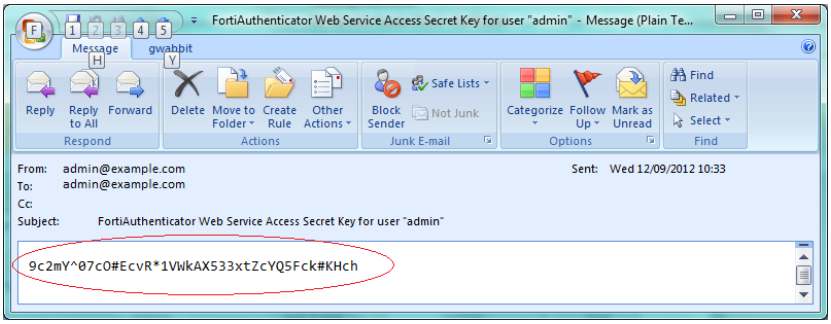
- Select *User Role:* ***Administrator***
- Enable *Web Service Access*
- Enter a valid email address. The API Key will be forwarded to this address so ensure it is valid and email routing is working beforehand.



- Click ***OK*** to save the details
- The API Web Service Access Key used to authenticate to the API will be e-mailed to the API administrator.



- Make a note of the API Web Service Access Key



Note: Should the API Web Service Access Key be lost, access can be recovered by disabling the Web Service feature for the user, saving and then re-enabling the feature. A new key will be generated (and all code using it will need to be updated with the new credentials).

Accessing the REST API

The FortiAuthenticator API can be accessed from most browsers (GET) however browser add-ons may be required for extended operations (e.g. PUT). More complicated, scripted queries can be made using utilities such as cURL and most scripting languages such as Perl or Python have built in libraries for interacting with RESTful APIs.

Example shown within this document will be demonstrated with the cross platform utility cURL.

All of the resource URLs are in this form:

https://[server_name]/api/[api_version]/[resource]/

where:

`server_name`	=	Name or IP of the FortiAuthenticator
`api_version`	=	API version to be used (currently v1)
`resource`	=	Resource or part of config to be viewed
`id`	=	Resource ID to view, edit or delete.

Filtering query results

Queries to the API can be to modify the query/response format or to filter the results. Below are some arguments that can be passed to the REST API URL. Please refer to the specific resource documentation to find out which of these filter operations are allowed.

`?format=[format_type]`	where format _type= xml or json (default)
`?limit=[integer]`	where integer specifies number of records to return (default unlimited)
`?offset=[integer]`	where integer specifies number of items in resource list to skip e.g. if there are 10 items, to return item #5 - #10 only, specify offset=4
`?order_by=[field]`	order returned list by a known field name (e.g.?order_by=name)

Field filters

- exact: search for an exact match (e.g. to return items that has a name matching "John Doe", `name__exact=John Doe`)
- in: search for items that matches specific filter criteria (e.g. to return items that has a name matching "John" or "Bill", `?name__in=John&name__in=Bill)`

Supported API Methods

To list all of the available resource endpoints in the current software release, send a GET request to: https://[server_name]/api/[api_version]/?format=xml

Method	URL	Operation Description	Success Response Code
`GET (list)`	`/[resource]/`	Retrieve a list of all resources for the endpoint	200 OK
`GET (detail)`	`/[resource]/[id]/`	Retrieve a specific resource with ID `id` from the endpoint	200 OK
`POST`	`/[resource]/`	Create a new resource on the given endpoint. The data being POST-ed must follow the same format as the data returned by the GET parameter	201 CREATED
`PUT (list)`	`/[resource]/`	Update all of the resources for the given endpoint. Any existing items will be replaced with the new data. Data must follow the same format as the data returned by the GET parameter.	204 NO CONTENT
`PUT (detail)`	`/[resource]/[id]/`	Update an existing item specified with ID `id`. Data must follow the same format as the data returned by the GET parameter.	204 NO CONTENT
`DELETE (list)`	`/[resource]/`	Delete all resources from an endpoint	204 NO CONTENT
`DELETE (detail)`	`/[resource]/[id]/`	Delete an existing resource specified with ID `id` from an endpoint	204 NO CONTENT
`PATCH (detail)`	`/[resource]/[id]/`	Update specific fields on an existing item with ID `id`	202 ACCEPTED

Supported Data Formats

Currently, JSON and XML are supported. To specify a format on the request:

For a GET request, there are 2 options:

- Use the GET format parameter (e.g. ?format=json or ?format=xml)
- Specify an Accept HTTP header with a correct mimetype (e.g. Accepts: application/json for JSON)

Note: The GET format parameter takes precedence over the Accept header.

Browsers will usually default to requesting for an XML data type when format is not specified for a GET request.

Resource Summary

There are currently 6 main resources and the root record which can be accessed via the API:

Resource	URL	Operation Description	Supported Methods
Root	/	Allows querying of available resources	GET
Local User Management	/localusers/	Allows the creation, modification and deletion of user accounts	GET, POST, PATCH
Local Group Management	/usergroups/	Allows the creation and deletion of user groups and specify users within that group.	GET, POST, PUT, DELETE
User Authentication	/auth/	Allows validation of user authentication credentials	POST
FortiToken	/fortitokens/	Allows provisioning of FortiTokens	
SSO Group	/ssogroup/	Enables remote configuration of the SSO & Dynamic Policies → SSO → SSO Groups table	GET, POST, DELETE
FortiGate Filter Group	/fgtgroupfilter/	Enables remote configuration of the SSO & Dynamic Policies → SSO→ FortiGate Group Filtering table	GET, PUT
SSO Authentication	/ssoauth/	Adds/removes a user from the FSSO logged in users table.	POST

Example API Calls

For the purpose of these examples, cURL is being used to make the requests. cURL is more flexible than a browser alone, is cross platform and can be called from most scripts. It is not as flexible as native scripting languages but is a good clear example which can be used to understand how the API functions.

The following flags are used in the cURL query:

`-k` Ignore certificate errors. This can be overcome with use of a valid certificate.

`-v` Verbose. Increase the level of logging information (useful for debugging).

`-u` User login information in format `USER[:PASSWORD]`

Note: When using PUT/POST with cURL on Windows, problems can be encountered with escaping of the required double quotes in the data content, leading to errors related to incomplete closed brackets. To avoid this, the code should be properly escaped (using \ before any double quotes) or the data text stored in a file and referenced using `-d @<filename>`

Alternatively, it is highly recommended that this is run on a Linux OS, where escaping of characters in cURL is more predictable.

General API Usage

View Available Endpoint Resources

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
https://192.168.0.122/api/v1/?format=json
```

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"  -H 'Accept:
application/json' https://192.168.0.122/api/v1/
```

Response

```
< HTTP/1.1 200 OK
< Date: Mon, 09 Jun 2014 10:51:23 GMT
< Server: Apache
< Vary: Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"auth": {"list_endpoint": "/api/v1/auth/", "schema": "/api/v1/auth/schema/"},
"fgtgroupfilter": {"list_endpoint": "/api/v1/fgtgroupfilter/", "schema":
"/api/v1/fgtgroupfilter/schema/"}, "fortitokens": {"list_endpoint":
"/api/v1/fortitokens/", "schema": "/api/v1/fortitokens/schema/"}, "localusers":
{"list_endpoint": "/api/v1/localusers/", "schema": "/api/v1/localusers/schema/"},
"ssoauth": {"list_endpoint": "/api/v1/ssoauth/", "schema":
"/api/v1/ssoauth/schema/"}, "ssogroup": {"list_endpoint": "/api/v1/ssogroup/",
"schema": "/api/v1/ssogroup/schema/"}, "usergroups": {"list_endpoint":
"/api/v1/usergroups/", "schema": "/api/v1/usergroups/schema/"}}
```

XML Query

XML specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
https://192.168.0.122/api/v1/?format=xml
```

XML specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/xml' https://192.168.0.122/api/v1/
```

Response

```
< HTTP/1.1 200 OK
< Date: Mon, 09 Jun 2014 11:03:25 GMT
< Server: Apache
< Vary: Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Transfer-Encoding: chunked
< Content-Type: application/xml; charset=utf-8
<
<?xml version='1.0' encoding='utf-8'?>
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
<response><fgtgroupfilter
type="hash"><list_endpoint>/api/v1/fgtgroupfilter/</list_endpoint><schema>/api/v1/fg
tgroupfilter/schema/</schema></fgtgroupfilter><localusers
type="hash"><list_endpoint>/api/v1/localusers/</list_endpoint><schema>/api/v1/localu
sers/schema/</schema></localusers><usergroups
type="hash"><list_endpoint>/api/v1/usergroups/</list_endpoint><schema>/api/v1/usergr
oups/schema/</schema></usergroups><auth
type="hash"><list_endpoint>/api/v1/auth/</list_endpoint><schema>/api/v1/auth/schema/
</schema></auth><fortitokens
type="hash"><list_endpoint>/api/v1/fortitokens/</list_endpoint><schema>/api/v1/forti
tokens/schema/</schema></fortitokens><ssogroup
```

```
type="hash"><list_endpoint>/api/v1/ssogroup/</list_endpoint><schema>/api/v1/ssogroup
/schema/</schema></ssogroup><ssoauth
type="hash"><list_endpoint>/api/v1/ssoauth/</list_endpoint><schema>/api/v1/ssoauth/s
chema/</schema></ssoauth></response>
```

User Groups (/usergroups/)

URL: `https://[server_name]/api/[api_version]/usergroups/`

This end-point represents the user group resource. In the FortiAuthenticator GUI, this resource corresponds to *Authentication → User Groups.* This API is for use by third party user provisioning systems.

Supported Fields

Field	Description	Type	Required	Other Restriction
name	Group name	String	Yes	max length = 50
users	List of local users in the group	List	No	List of local users URI

Allowed Methods

Type	Allowed Methods	Action	Note
	GET	Get all groups and associated users	
	POST	Create a new user	
	PATCH	Add users to a user group	
	DELETE	Delete a specified group	

Allowed Filters

Field	Filters
name	Exact value

View All User Groups

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
https://192.168.0.122/api/v1/usergroups/?format=xml
```

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/xml' https://192.168.0.122/api/v1/usergroups/
```

Response

```
< HTTP/1.1 200 OK
< Date: Mon, 09 Jun 2014 11:46:34 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/xml; charset=utf-8
<
<?xml version='1.0' encoding='utf-8'?>
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
<response>

<objects type="list"><object><users type="list"/>
<idtype="integer">5</id><name>REST_RADIUS</name><resource_uri>/api/v1/usergroups/5/<
/resource_uri></object>

<object><users type="list"/>
<idtype="integer">4</id><name>Test_LDAP</name><resource_uri>/api/v1/usergroups/4/</r
esource_uri></object>

<object><users type="list"><value>/api/v1/localusers/4/</value></users>
<idtype="integer">3</id><name>Test_Local</name><resource_uri>/api/v1/usergroups/3/</
resource_uri></object></objects>

<meta type="hash"><next type="null"/><total_count
type="integer">3</total_count><previous type="null"/><limit
type="integer">20</limit><offset type="integer">0</offset></meta></response>
```

The response above has been reformatted with carriage returns to make the results more clear.

The response shows that there are 3 groups already configured (in RED).

- Test_RADIUS (in ID position 5)
- Test_LDAP (in ID position 4)
- Test_Local (in ID position 3)

Test_RADIUS and Test_LDAP groups do not contain any users, however, the Test_Local group contains 1 user, identified as local user with ID=4 (in GREEN). See the LocalUsers for identifying Usernames from user IDs.

The total number of configured and supported User Groups is also returned for troubleshooting purposes (in GOLD)

Create a User Group

JSON Query

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -X POST -d
'{"name":"Group999"}' -H 'Content-Type: application/json'
https://192.168.0.122/api/v1/usergroups/
```

Response

```
< HTTP/1.1 201 CREATED
< Date: Mon, 09 Jun 2014 12:02:33 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Location: https://192.168.0.122/api/v1/usergroups/6/
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
```

Verify user group creation

Use API call documented in Allowed Filters

Field	Filters
username	Exact Match
first_name	Exact Match
last_name	Exact Match
email	Exact Match
city	Exact Match
state	Exact Match
country	Exact Match
token_type*	ftk, ftm, email, sms
token_serial*	Exact Match

List All Local Users above

```
< HTTP/1.1 200 OK
< Date: Mon, 09 Jun 2014 12:18:19 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/xml; charset=utf-8
<
<?xml version='1.0' encoding='utf-8'?>
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
<response><objects type="list"><object><users type="list"/><id type="integer">6</id>
<name>Group999</name><resource_uri>/api/v1/usergroups/6/</resource_uri></object><obj
ect><users type="list"/><id
type="integer">5</id><name>REST_RADIUS</name><resource_uri>/api/v1/usergroups/5/</re
source_uri></object><object><users type="list"/><id
type="integer">4</id><name>Test_LDAP</name><resource_uri>/api/v1/usergroups/4/</reso
urce_uri></object><object><users
type="list"><value>/api/v1/localusers/4/</value></users><id
type="integer">3</id><name>Test_Local</name><resource_uri>/api/v1/usergroups/3/</res
ource_uri></object></objects><meta type="hash"><next type="null"/><total_count
type="integer">4</total_count><previous type="null"/><limit
type="integer">20</limit><offset type="integer">0</offset></meta></response>
```

Attempt to create a user Group with the same name

```
< HTTP/1.1 400 BAD REQUEST
< Date: Mon, 09 Jun 2014 12:04:06 GMT
< Server: Apache
< Vary: Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Connection: close
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Closing connection #0
{"usergroups": {"name": ["A user group with that name already exists."]}}
```

Add a user to a group

Note, the required users should be elucidated by querying the /localusers/ list as documented in the Local Users (/localusers/) section. In this example:

test_user = /api/v1/localusers/5/

test_user2 = /api/v1/localusers/5/

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -X PATCH -d
'{"users":["/api/v1/localusers/5/","/api/v1/localusers/4/"]}' -H 'Content-Type:
application/json' https://192.168.0.122/api/v1/usergroups/9/
```

Caution: This command is not additive i.e. adding a single user entry will not increment the list it will overwrite. Using {"users":[]} for example will clear the users list.

Delete a User Group

JSON Query

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -X DELETE -H
'Content-Type: application/json' https://192.168.0.122/api/v1/usergroups/6/
```

Response

```
< HTTP/1.1 204 NO CONTENT
< Date: Mon, 09 Jun 2014 12:25:18 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
```

Note that 204 NO CONTENT shows that the group has been successfully deleted. A subsequent listing confirms this as Group999 no longer exists.

```
< HTTP/1.1 200 OK
< Date: Mon, 09 Jun 2014 12:26:05 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/xml; charset=utf-8
<
<?xml version='1.0' encoding='utf-8'?>
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
<response><objects type="list"><object><users type="list"/><id
type="integer">5</id><name>REST_RADIUS</name><resource_uri>/api/v1/usergroups/5/</re
source_uri></object><object><users type="list"/><id
type="integer">4</id><name>Test_LDAP</name><resource_uri>/api/v1/usergroups/4/</reso
urce_uri></object><object><users
type="list"><value>/api/v1/localusers/4/</value></users><id
type="integer">3</id><name>Test_Local</name><resource_uri>/api/v1/usergroups/3/</res
ource_uri></object></objects><meta type="hash"><next type="null"/><total_count
type="integer">3</total_count><previous type="null"/><limit
type="integer">20</limit><offset
type="integer">0</offset></meta></response>[Carl@CentOS ~]$
```

Caution: The Delete command will delete the group even if the group contains users or if it is in use e.g. in a RADIUS Client configuration. Checks should be made prior to executing this command.

View a specific User Group

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
“https://192.168.0.122/api/v1/usergroups/?format=json&name=/api/v1/usergroups/8/”
```

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/json'“https://192.168.0.122/api/v1/usergroups/?format=json&name=Group999
”
```

Note: The filter used in this situation is the group “name” not the URL or ID.

Note: The URL requires additional quoting in this case otherwise the Unix CLI treats the “&” as an instruction to place the cURL command into the background.

Note: Querying a non-existent group will return a successful 200 OK response with empty object data. This is by design as this is not necessarily an error situation.

Response

```
< HTTP/1.1 200 OK
< Date: Tue, 10 Jun 2014 10:11:47 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count":
1}, "objects": [{"id": 9, "name": "Group999", "resource_uri":
"/api/v1/usergroups/9/", "users": ["/api/v1/localusers/5/"]}]}
```

FortiTokens (/fortitoken/)

URL: `https://[server_name]/api/[api_version]/fortitokens/`

This end-point represents the FortiToken resource. In the FortiAuthenticator GUI, this resource corresponds to *User Management → FortiTokens.* This API is for use by third party user provisioning systems to ascertain which tokens are available to be provisioned to a user.

Supported Fields

Field	Display Name	Type	Required	Other Restriction
type	Type	String	No	Either ftk or ftm
status	Status	String	No	One of new, available, pending, assigned

Allowed Methods

Type	Allowed Methods	Action	Note
List	GET	Get all FortiTokens	

Allowed Filters

Field	Filters
type	ftk, ftm
status	new, available, pending, assigned

View All Tokens

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
https://192.168.0.122/api/v1/fortitokens/?format=json
```

Response

```
< HTTP/1.1 200 OK
< Date: Mon, 09 Jun 2014 18:17:42 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count":
2}, "objects": [{"resource_uri": "/api/v1/fortitokens/1/", "serial":
"FTKMOB44142CCBF3", "status": "available", "type": "ftm"}, {"resource_uri":
"/api/v1/fortitokens/2/", "serial": "FTKMOB4471BB94D1", "status": "available",
"type": "ftm"}]}
```

View subset of tokens using filters

This example shows how it is possibly to obtain a list of specific tokens e.g. The first available FortiToken Mobile token.

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/json'
"https://192.168.0.122/api/v1/fortitokens/?format=json&type=ftm&status=available&lim
it=1"
```

Note: The URL requires additional quoting in this case otherwise the Unix CLI treats the “&” as an instruction to place the cURL command into the background.

Response

```
< HTTP/1.1 200 OK
< Date: Mon, 09 Jun 2014 18:17:42 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 1, "next":
"/api/v1/fortitokens/?status=available&type=ftm&offset=1&limit=1&format=json",
"offset": 0, "previous": null, "total_count": 2}, "objects": [{"resource_uri":
"/api/v1/fortitokens/1/", "serial": "FTKMOB44142CCBF3", "status": "available",
"type": "ftm"}]}
```

Local Users (/localusers/)

URL: `https://[server_name]/api/[api_version]/localusers/`

This end-point represents local user resource i.e. a user account. In the FortiAuthenticator GUI, this resource corresponds to *Authentication → Local Users.* This API is for use by third party provisioning systems.

Supported Fields

Field	Display Name	Type	Required	Other Restriction
address	Address	string	No	max length = 80
city	City	string	No	max length = 40
country	Country	string	No	Must be a country code from ISO-3166 list
custom1	Custom user field 1	string	No	max length = 255
custom2	Custom user field 2	string	No	max length = 255
custom3	Custom user field 3	string	No	max length = 255
email	E-mail address	string	No	Must be a valid e-mail address
first_name	First name	string	No	max length = 30
last_name	Last name	string	No	max length = 30
mobile_number	Mobile number	string	No	max length = 25, must follow international number format: +[country_code]-[number]
phone_number	Mobile number	string	No	max length = 25
state	State or province	string	No	max length = 40
user_groups	Local user groups that this user is a member of	list	No	List of user groups URI
token_auth*	Token Auth	boolean	No	Whether second factor authentication should be enabled. If 'true', token_type is required.
token_type*	Token Type	string	No	One of ftk, ftm, email, sms. If email is chosen, email is required. If SMS is chosen, mobile_number is required.
token_serial*	Token Serial	string	No	If token_type is ftm, or ftk,

				and this is not present or blank, the next available token will be assigned.

Additionally, when creating a new user, the following two fields are available.

Field	Display Name	Type	Required	Other Restriction
username	Username	string	Yes	max length = 30, contains only letters, numbers and @/./+/-/_ characters
password	Password	string	No	max length = 50 If not specified, email becomes

Allowed Methods

Type	Allowed Methods	Action	Note
List	GET	Get all regular users	
Detail	GET	Get a specific user	
List	POST	Create a new user	If password is specified, it will be set. If password is not specified, the email field becomes required, and a random password will be created and e-mailed to the user.
Detail	PATCH	Update specified fields for a specific user	

Allowed Filters

Field	Filters
username	Exact Match
first_name	Exact Match
last_name	Exact Match
email	Exact Match
city	Exact Match
state	Exact Match
country	Exact Match
token_type*	ftk, ftm, email, sms
token_serial*	Exact Match

List All Local Users

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
https://192.168.0.122/api/v1/localusers/?format=xml
```

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/xml' https://192.168.0.122/api/v1/ localusers/
```

Response

```
< HTTP/1.1 200 OK
< Date: Mon, 09 Jun 2014 20:14:23 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count":
2}, "objects": [{"address": "", "city": "", "country": "", "custom1": "", "custom2":
"", "custom3": "", "email": "", "first_name": "", "id": 5, "last_name": "",
"mobile_number": "", "phone_number": "", "resource_uri": "/api/v1/localusers/5/",
"state": "", "token_auth": false, "token_serial": "", "token_type": null,
"user_groups": ["/api/v1/usergroups/9/", "/api/v1/usergroups/8/"], "username":
"test_user2"}, {"address": "", "city": "", "country": "", "custom1": "", "custom2":
"", "custom3": "", "email": "", "first_name": "", "id": 4, "last_name": "",
"mobile_number": "", "phone_number": "", "resource_uri": "/api/v1/localusers/4/",
"state": "", "token_auth": false, "token_serial": "", "token_type": null,
"user_groups": ["/api/v1/usergroups/8/"], "username": "test_user"}]}
```

Here you will notice that there are 2 users defined “test_user” and “test_user2”. Note that admin users are not returned by the localusers query.

Create Local User

JSON Query

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -X POST -d
'{"username":"test_user3","password":"testpassword","email":"test_user3@example.com"
,"mobile":"+44-1234567890"}' -H 'Content-Type: application/json'
https://192.168.0.122/api/v1/localusers/
```

Response

```
< HTTP/1.1 201 CREATED
< Date: Mon, 09 Jun 2014 20:29:20 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
```

```
< Location: https://192.168.0.122/api/v1/localusers/6/
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
```

Verify user creation

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
https://192.168.0.122/api/v1/localusers/?format=json


< HTTP/1.1 200 OK
< Date: Mon, 09 Jun 2014 20:30:26 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count":
3}, "objects": [{"address": "", "city": "", "country": "", "custom1": "", "custom2":
"", "custom3": "", "email": "", "first_name": "", "id": 5, "last_name": "",
"mobile_number": "", "phone_number": "", "resource_uri": "/api/v1/localusers/5/",
"state": "", "token_auth": false, "token_serial": "", "token_type": null,
"user_groups": ["/api/v1/usergroups/9/", "/api/v1/usergroups/8/"], "username":
"test_user2"}, {"address": "", "city": "", "country": "", "custom1": "", "custom2":
"", "custom3": "", "email": "", "first_name": "", "id": 4, "last_name": "",
"mobile_number": "", "phone_number": "", "resource_uri": "/api/v1/localusers/4/",
"state": "", "token_auth": false, "token_serial": "", "token_type": null,
"user_groups": ["/api/v1/usergroups/8/"], "username": "test_user"}, {"address": "",
"city": "", "country": "", "custom1": "", "custom2": "", "custom3": "", "email":
"test_user3@example.com", "first_name": "", "id": 6, "last_name": "",
"mobile_number": "", "phone_number": "", "resource_uri": "/api/v1/localusers/6/",
"state": "", "token_auth": false, "token_serial": "", "token_type": null,
"user_groups": [], "username": "test_user3"}]}
```

Modify Local User

JSON Query

JSON specified via Accept Header

Modify the newly created user “test_user3” aka User ID == 6 using the PATCH command.

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -X PATCH -d
'{"custom1":"example","country":"GB"}' -H 'Content-Type: application/json'
https://192.168.0.122/api/v1/localusers/6/
```

Response

```
< HTTP/1.1 202 ACCEPTED
< Date: Mon, 09 Jun 2014 21:07:28 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
```

Delete Local User

Deleing a user via the API is currently not supported.

Applying Filters

List Specific Local User

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
“https://192.168.0.122/api/v1/localusers/?format=json&username=test_user3”
```

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/json' “https://192.168.0.122/api/v1/localusers/?username=test_user3”
```

Response

```
< HTTP/1.1 200 OK
< Date: Tue, 10 Jun 2014 11:06:20 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count":
1}, "objects": [{"address": "", "city": "", "country": "", "custom1": "example",
"custom2": "", "custom3": "", "email": "test_user3@example.com", "first_name": "",
"id": 6, "last_name": "", "mobile_number": "", "phone_number": "", "resource_uri":
"/api/v1/localusers/6/", "state": "", "token_auth": false, "token_serial": "",
"token_type": null, "user_groups": [], "username": "test_user3"}]}[
```

View all users from Country=GB

JSON Query

JSON specified via Accept Header

View all users from the country GB (Great Britain).

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/json' "https://192.168.0.122/api/v1/localusers/?country=GB"
```

Response

```
< HTTP/1.1 200 OK
< Date: Tue, 10 Jun 2014 11:14:39 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
```

```
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count":
2}, "objects": [{"address": "", "city": "", "country": "GB", "custom1": "example",
"custom2": "", "custom3": "", "email": "test_user3@example.com", "first_name": "",
"id": 6, "last_name": "", "mobile_number": "", "phone_number": "", "resource_uri":
"/api/v1/localusers/6/", "state": "", "token_auth": false, "token_serial": "",
"token_type": null, "user_groups": [], "username": "test_user3"}, {"address": "",
"city": "", "country": "GB", "custom1": "example", "custom2": "", "custom3": "",
"email": "", "first_name": "", "id": 5, "last_name": "", "mobile_number": "",
"phone_number": "", "resource_uri": "/api/v1/localusers/5/", "state": "",
"token_auth": false, "token_serial": "", "token_type": null, "user_groups":
["/api/v1/usergroups/9/", "/api/v1/usergroups/8/"], "username": "test_user2"}]}[
```

SSO/Remote Groups (/ssogroup/)

URL: `https://[server_name]/api/[api_version]/ssogroup/`

In the FortiAuthenticator GUI, this resource corresponds to *Fortinet SSO Methods → SSO → SSO Groups*.

Supported Fields

Field	Display Name	Type	Required	Other Restriction
name	Name	string	Yes	max length=50, unique

Allowed Methods

Type	Allowed Methods	Action	Note
List	GET	Get all SSO/Remote Groups	
List	POST	Create a new SSO/Remote Groups	
Detail	DELETE	Delete a SSO/Remote Groups	

Allowed Filters

Field	Filters
name	Case sensitive match

View SSO Group Configuration

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
https://192.168.0.122/api/v1/ssogroup/?format=json
```

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/json' https://192.168.0.122/api/v1/ssogroup/
```

Response

```
< HTTP/1.1 200 OK
< Date: Tue, 10 Jun 2014 11:48:08 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
```

```
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count":
1}, "objects": [{"id": 1, "name": "Test_Group1", "resource_uri":
"/api/v1/ssogroup/1/"}]}{"meta": {"limit": 20, "next": null, "offset": 0,
"previous": null, "total_count": 1}, "objects": [{"id": 1, "name": "Test_Group1",
"resource_uri": "/api/v1/ssogroup/1/"}]}
```

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
https://192.168.0.122/api/v1/ssogroup/?format=json
```

JSON specified via Accept Header

```
curl -k -v -u "zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/json' https://192.168.0.122/api/v1/ssogroup/
```

Response

```
< HTTP/1.1 200 OK
< Date: Tue, 10 Jun 2014 11:48:08 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count":
1}, "objects": [{"id": 1, "name": "Test_Group1", "resource_uri":
"/api/v1/ssogroup/1/"}]}{"meta": {"limit": 20, "next": null, "offset": 0,
"previous": null, "total_count": 1}, "objects": [{"id": 1, "name": "Test_Group1",
"resource_uri": "/api/v1/ssogroup/1/"}]}
```

Create SSO Group

JSON Query

JSON specified via POST

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -X POST -d
'{"name":"Test_Group2"}' -H 'Content-Type: application/json'
https://192.168.0.122/api/v1/ssogroup/
```

XML Query

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -X POST -d
'<object><name>Test_Group2</name></object>' -H 'Content-Type: application/xml'
https://192.168.0.122/api/v1/ssogroup/
```

Response

```
< HTTP/1.1 201 CREATED
< Date: Tue, 10 Jun 2014 11:51:31 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Location: https://192.168.0.122/api/v1/ssogroup/3/
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
```

Successful 201 CREATED response code. See Appendix A –API Response Codes for full details.

Delete SSO Group

Query

Specified via POST

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -X DELETE
https://192.168.0.122/api/v1/ssogroup/3/
```

Response

```
< HTTP/1.1 204 NO CONTENT
< Date: Tue, 10 Jun 2014 11:53:52 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
```

204 NO CONTENT is a successful result. Verify by querying /ssogroup/ to verify group 3 has been deleted.

FortiGate Group Filter (/fgtgroupfilter/)

URL: `https://[server_name]/api/[api_version]/fgtgroupfilter/`

In the FortiAuthenticator GUI, this resource corresponds to *Fortinet SSO Methods → SSO → FortiGate Group Filtering.*

Supported Fields

Field	Display Name	Type	Required	Other Restriction
name	Name	string	Yes	max length=32, unique
nasname	NAS name/IP	string	Yes	max length=128, unique
sso_groups	SSO Groups	string	No	

Allowed Methods

Type	Allowed Methods	Action	Note
List	GET	Get all group filters	
List	PUT	Create a new SSO/Remote Groups	

Allowed Filters

Field	Filters
name	Case sensitive match

View FortiGate Group Filter Configuration

JSON Query

JSON specified via GET

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
https://192.168.0.122/api/v1/fgtgroupfilter/?format=json
```

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -H 'Accept:
application/json' https://192.168.0.122/api/v1/fgtgroupfilter/
```

JSON Response

```
< HTTP/1.1 200 OK
< Date: Tue, 10 Jun 2014 13:49:24 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
```

```
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count":
1}, "objects": [{"address": "1.1.1.1", "id": 1, "name": "GroupFilter_Test1",
"nasname": "1.1.1.1", "resource_uri": "/api/v1/fgtgroupfilter/1/", "shortname":
"GroupFilter_Test1", "sso_groups": [
```

Add FortiGate Group Filter Configuration

Note that POST is not an allowed method so FGTGroup filters cannot be created via the API, howver once created via the GUI, they can be modified. See ***Modify FortiGate Group Filter Configuration***

Modify FortiGate Group Filter Configuration

JSON Query

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -X PUT -d
'{"shortname":"GroupFilter_Test1","nasname":"2.2.2.2", "sso_groups": []}' -H
'Content-Type: application/json' https://192.168.0.122/api/v1/fgtgroupfilter/1/
```

JSON Response

```
< HTTP/1.1 204 NO CONTENT
< Date: Mon, 16 Jun 2014 16:35:16 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
```

SSO Auth (/ssoauth/)

URL: `https://[server_name]/api/[api_version]/ssoauth/`

This end-point represents the Fortinet SSO Authentication. In the FortiAuthenticator GUI, this resource corresponds to *Fortinet SSO Methods → SSO.* This API is for use by third party authentication systems for dynamic transparent user Single Sign-on to a Fortinet protected network.

Note that before attempting to authenticate, additional configuration is required under *Fortinet SSO Methods → Portal Services → SSO Web Service* to select which user directory is to be used for group embellishment.

Supported Fields

Field	Display Name	Type	Required	
event	Event type	integer/string	Yes	0=Login 1=Logout
username	User's username	string	Yes	max length=253
user_ip	User's workstation IP (Calling-Station-Id)	IPv4	Yes	
user_groups	Groups to send (Fortinet-Group-Name)	string	No	max length=253, list of groups must be separated with "+" character (group name cannot contain a "+" character)

Allowed Methods

Type	Allowed Methods	Action	Note
List	POST	Logon/logoff users to/from FSSO	

Response Codes

In addition to the general codes defined in Appendix A –API Response Codes, a POST request to this resource can result in the following return codes:

Code	Response Content	Description
200 OK		FSSO login/logout request has been successfully sent to FSSO (but this doesn't mean that user has been logged-on/off, as the request is done asynchronously and is queued on FSSO side. Factors such as configuration and user not rxisting in LDAP may cause the entry to not

		populate FSSO).
404 Not Found	SSO web service is disabled	SSO web service has not been enabled so it can't be used in REST API
500 Internal Server Error		Failed to send logon/logoff request to FSSO

FSSO User Login

JSON Query

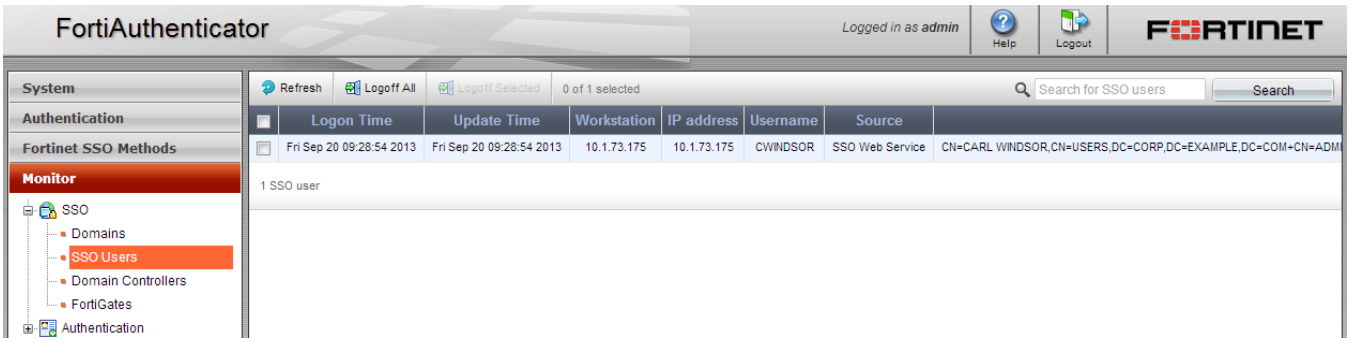
JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -d
'{"event":"1","username":"cwindsor","user_ip":"10.1.73.175"}' -H "Content-Type:
application/json" https://192.168.0.122/api/v1/ssoauth/
```

Response

```
< HTTP/1.1 200 OK
< Date: Fri, 20 Sep 2013 08:27:27 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< Content-Language: en
< Set-Cookie: sessionid=6q6m6ne4v7p76qclajitlf2q7202f7g6; httponly; Path=/
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
```

Verify Login on FortiAuthenticator



Overwrite FSSO user login with different user

Note that if a login event is received with the same IP address but with a different username, the existing entry will be overwritten.

JSON Query

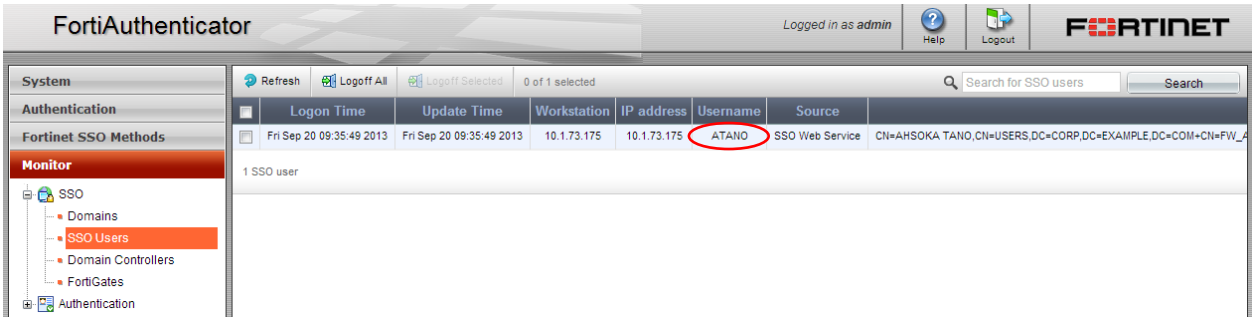
JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -d
'{"event":"1","username":"atano","user_ip":"10.1.73.175"}' -H "Content-Type:
application/json" https://192.168.0.122/api/v1/ssoauth/
```

Response

```
< HTTP/1.1 200 OK
< Date: Fri, 20 Sep 2013 08:32:21 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< Content-Language: en
< Set-Cookie: sessionid=g062qqmsj6nr0hk5khd2q7202e4v36m; httponly; Path=/
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
```

Verify Login on FortiAuthenticator



Logout FSSO User

JSON Query

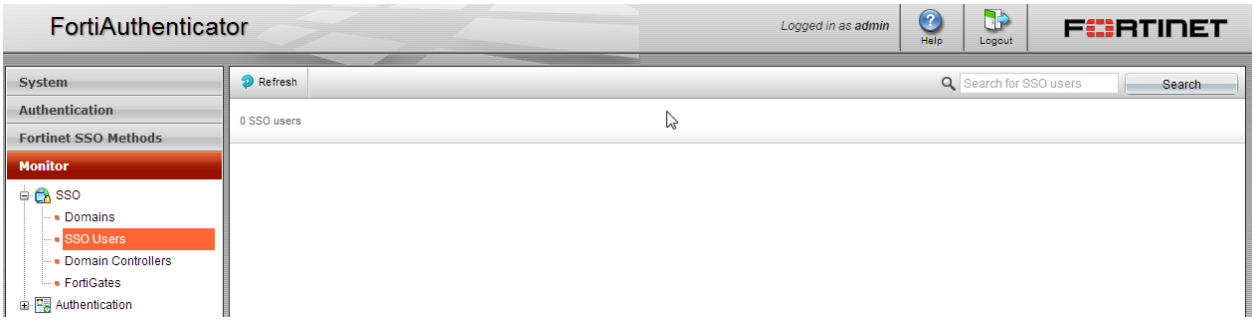
JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -d
'{"event":"0","username":"atano","user_ip":"10.1.73.175"}' -H "Content-Type:
application/json" https://192.168.0.122/api/v1/ssoauth/
```

Response

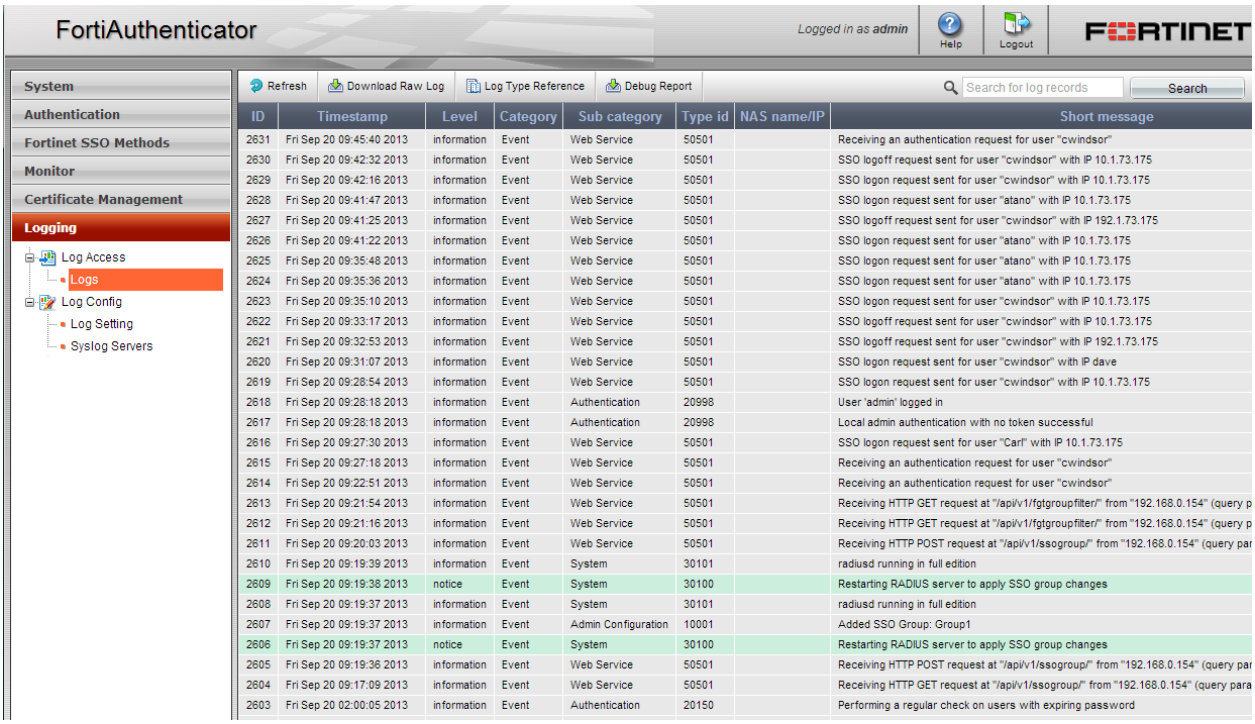
```
< HTTP/1.1 200 OK
< Date: Fri, 20 Sep 2013 08:34:09 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< Content-Language: en
< Set-Cookie: sessionid=2q de4v36msj6g05khm6nr02q72q02hk; httponly; Path=/
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
```

Verify Logout on FortiAuthenticator



Logging

Note that SSO Login requests are logged regardless of whether the user details can be inserted into FSSO. For example logs may exist for SSO Logon for a user but an entry not appear in the monitor because when an LDAP lookup for group info was performed, no user existed.

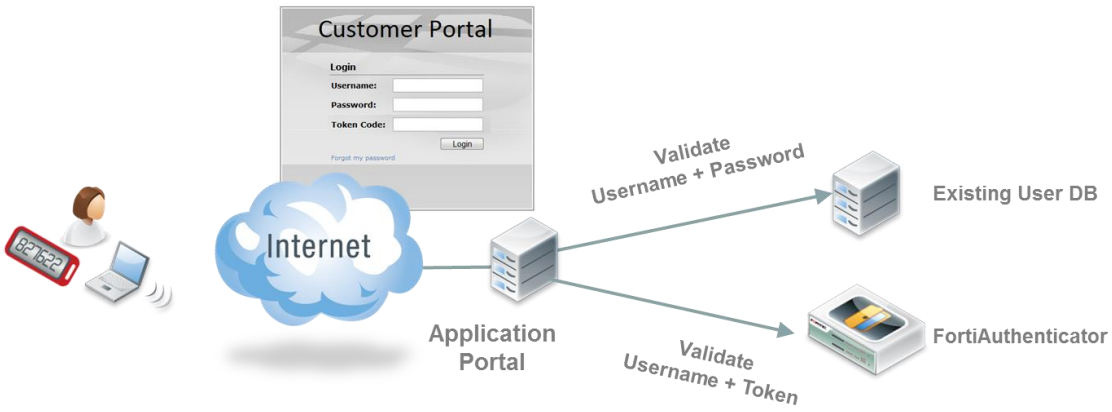


Authentication (/auth/)

URL: `https://[server_name]/api/[api_version]/auth/`

The Authentication API is for validation of user credentials. Either the password, token or both can be validated. This is useful for adding an additional factor authentication (e.g. token) to web portals where the first factor as already being validated locally e.g. via LDAP or local DB or a proprietary, unsupported authentication method as is common in the banking industry.

Note: This API is for the validation of local user password and token passcode or remote user passcode only. Validation of remote user password is not supported. This is by design as most systems have an established mechanism for authentication via e.g. LDAP or some other proprietary mechanism as shown below.



To authenticate a user, you need to POST to **Error! Hyperlink reference not valid.** with the following key-value pair (in JSON format, but XML also possible):

```
{"username": "<username>", "token_code": "<token_code>", "password": "<password>"}
```

with "token_code" and "password" being optional fields i.e. you can just validate the token only or the password only. If password and token are specified, the password will be validated first before token code.

Supported Fields

Field	Display Name	Type	Required	Other Restriction
username	Username	string	Yes	
password	Password	string	No	
token_code	Security token code (only FortiToken? is supported)	string	No	

Allowed Methods

Type	Allowed	Action	Note

	Methods		
List	POST	Validate user's credentials	Either password or token_code needs to be specified. If both are specified, password will be validated first, then token_code. If only one is specified (either password or token_code), only that credential will be validated. If a user doesn't have two-factor authentication configured, validation for that user with any token_codewill always pass.

Response Codes

In addition to the general codes defined in Appendix A –API Response Codes, a POST request to this resource can result in the following return codes:

Code	Response Content	Description
200 OK		User is successfully authenticated.
401 Unauthorized	User authentication failed	Credential is incorrect
401 Unauthorized	Token is out of sync	The security token requires synchronization
401 Unauthorized	User account is temporarily locked	User has reached maximum failed authentication attempts and is temporarily locked
404 Not Found on System	User does not exist	The given username does not exist in the system
200 OK		User is successfully authenticated.

Validate a user password

Query

JSON specified via Accept Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -d
'{"username":"testuser","password":"testpass"}' -H "Content-Type: application/json"
https://192.168.0.122/api/v1/auth/
```

Response

```
< HTTP/1.1 200 OK
< Date: Fri, 14 Sep 2012 15:38:57 GMT
< Server: Apache
< Vary: Cookie
< Set-Cookie: sessionid=6b17c5bbb86419a94f6979a05bd84139; httponly; Path=/
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
```

Validate a users token code

Query

JSON specified via Content-Type Header

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS" -d
'{"username":"testuser","token_code":"893753"}' -H "Content-Type: application/json"
https://192.168.0.122/api/v1/auth/
```

Response

```
< HTTP/1.1 200 OK
< Date: Fri, 14 Sep 2012 15:47:22 GMT
< Server: Apache
< Vary: Cookie
< Set-Cookie: sessionid=f15beeab159a4bf2d0402a05db40d6ae; httponly; Path=/
< Content-Length: 0
< Content-Type: text/html; charset=utf-8
```

Error States

Response (incorrect password)

```
HTTP/1.1 401 UNAUTHORIZED
Date: Thu, 13 Sep 2012 13:57:24 GMT
Server: Apache
Vary: Cookie
Set-Cookie: sessionid=abe8bac6fc50caf5eadf1e57f0c60e3e; httponly; Path=/
Content-Length: 26
Content-Type: text/html; charset=utf-8
```

Response (incorrect token code)

```
HTTP/1.1 401 UNAUTHORIZED
Date: Thu, 13 Sep 2012 13:55:18 GMT
Server: Apache
Vary: Cookie
Set-Cookie: sessionid=e95090804ee0e3b8903618138b38a5c8; httponly; Path=/
Content-Length: 26
Content-Type: text/html; charset=utf-8
```

Response (incorrect username)

```
HTTP/1.1 404 NOT FOUND
Date: Thu, 13 Sep 2012 13:58:54 GMT
Server: Apache
Vary: Cookie
Set-Cookie: sessionid=3b353061d9141567c02bb0d057b18284; httponly; Path=/
Content-Length: 19
Content-Type: text/html; charset=utf-8
```

Advanced Filtering

Results of the API calls can be controlled in several ways. Below are some arguments that can be passed to the REST API URL. Please refer to the specific resource documentation to find out which of these filter operations are allowed.

General Filters

General filters can be applied to most resources.

Limits

limit: *limit number of items returned*

To search for the first entry in a resource

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
“https://192.168.0.122/api/v1/localusers/?format=json&limit=1”
```

Note: The URL requires additional quoting in this case otherwise the Unix CLI treats the “&” as a instruction to place the cURL command into the background.

Response

```
< HTTP/1.1 200 OK
< Date: Tue, 10 Jun 2014 09:43:33 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
* Connection #0 to host 192.168.0.122 left intact
* Closing connection #0
{"meta": {"limit": 1, "next": "/api/v1/localusers/?offset=1&limit=1&format=json", "offset": 0, "previous": null,
"total_count": 3}, "objects": [{"address": "", "city": "", "country": "", "custom1": "", "custom2": "", "custom3": "",
"email": "", "first_name": "", "id": 5, "last_name": "", "mobile_number": "", "phone_number": "", "resource_uri":
"/api/v1/localusers/5/", "state": "", "token_auth": false, "token_serial": "", "token_type": null, "user_groups":
["/api/v1/usergroups/9/", "/api/v1/usergroups/8/"], "username": "test_user2"}]}
```

Only the first user in the list is returned. Note that this excludes admin users which are never returned by this query hence the reason why this user ID is > 5.

Offset

offset: specify an offset for the returned items (zero-based). E.g. if there are 10 items, to return item #5 - #10 only, specify offset=4

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
“https://192.168.0.122/api/v1/localusers/?format=json&offset=4”
```

Order

order_by: *order returned list by a known field name (e.g. ?order_by=<field name>)*

```
curl -k -v -u "admin:zeyDZXmP6GbKcerqdWWEYNTnH2TaOCz5HTp2dAVS"
“https://192.168.0.122/api/v1/localusers/?format=json&order_by=username”
```

Response

```
< HTTP/1.1 200 OK
< Date: Tue, 10 Jun 2014 16:41:23 GMT
< Server: Apache
< Vary: Accept,Accept-Language,Cookie
< X-Frame-Options: SAMEORIGIN
< Content-Language: en
< Cache-Control: no-cache
< Transfer-Encoding: chunked
< Content-Type: application/json
<
{"meta": {"limit": 20, "next": null, "offset": 0, "previous": null, "total_count": 3}, "objects": [{"address": "", "city": "",
"country": "", "custom1": "", "custom2": "", "custom3": "", "email": "", "first_name": "", "id": 4, "last_name": "",
"mobile_number": "", "phone_number": "", "resource_uri": "/api/v1/localusers/4/", "state": "", "token_auth": false,
"token_serial": "", "token_type": null, "user_groups": ["/api/v1/usergroups/8/"], "username": "test_user"},
{"address": "", "city": "", "country": "GB", "custom1": "example", "custom2": "", "custom3": "", "email": "",
"first_name": "", "id": 5, "last_name": "", "mobile_number": "", "phone_number": "", "resource_uri":
"/api/v1/localusers/5/", "state": "", "token_auth": false, "token_serial": "", "token_type": null, "user_groups":
["/api/v1/usergroups/9/", "/api/v1/usergroups/8/"], "username": "test_user2"}, {"address": "", "city": "", "country":
"GB", "custom1": "example", "custom2": "", "custom3": "", "email": "test_user3@example.com", "first_name": "",
"id": 6, "last_name": "", "mobile_number": "", "phone_number": "", "resource_uri": "/api/v1/localusers/6/", "state": "",
"token_auth": false, "token_serial": "", "token_type": null, "user_groups": [], "username": "test_user3"}]}
```

Appendix A –API Response Codes

General API Response Codes

Code	Description
200 OK	The request was successfully completed.
201 Created	The request successfully created a new resource and the response body does not contain the newly created resource.
204 No Content	The server fulfilled the request, but does not need to return a response message body.
400 Bad Request	The request could not be processed because it contains missing or invalid information (i.e. the data in the request does not validate).
401 Not Authorized	The supplied credential is incorrect.
500 Internal Server Error	The server encountered an unexpected condition which prevented it from fulfilling the request.